

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for manufacturing a pressed part from a soft magnetic composite material, the method comprising:
providing a starting mixture including an iron powder and an auxiliary pressing agent,
and not including a thermoplastic material;
pressing the starting mixture to form a pressed part; and
annealing, in an annealing step, the pressed part in a gas mixture of inert gas and oxygen, a concentration of oxygen in the gas mixture being between 1% and 10% by volume.
2. (Original) The method of claim 1, wherein the concentration of the oxygen in the gas mixture is between 2% and 7% by volume, and the gas mixture is a mixture of air and one of nitrogen and a noble gas.
3. (Original) The method of claim 1, wherein the annealing is performed at temperatures between 380°C and 450°C over a time period of 10 to 120 minutes.
4. (Original) The method of claim 3, wherein the annealing is performed at a temperature of 425°C over a time period of 30 to 60 minutes.
5. (Original) The method of claim 1, wherein the pressing is performed at room temperature, and at a pressure between 600 MPa and 900 MPa.
6. (Currently Amended) The method of claim 5, wherein the pressing is performed at a pressure between 700 MPa to 800 MPa.
7. (Original) The method of claim 1, wherein the iron powder of the starting mixture is a phosphatized, pure iron powder and the auxiliary pressing agent is selected from the group including metal stearates, waxes, paraffins, natural or synthetic fat derivatives, and oligoamides, the oligoamides including Kenolube®.
8. (Currently Amended) [[The]] A method for manufacturing a pressed part from a soft magnetic composite material of claim 1, further the method comprising:
providing a starting mixture including an iron powder and an auxiliary pressing agent;

pressing the starting mixture to form a pressed part;
annealing, in an annealing step, the pressed part in a gas mixture of inert gas and oxygen, a concentration of oxygen in the gas mixture being between 1% and 10% by volume;
prior to the annealing step, initially annealing the pressed parts at a temperature of 150°C to 400°C in one of air, an inert-gas atmosphere, and a mixture of an inert gas and oxygen in which an oxygen concentration in the gas mixture is between 1% and 10% by volume; and
postforming the pressed parts.

9. (Original) The method of claim 8, wherein the pressed parts are initially annealed at a temperature of 230°C to 310°C.

10. (Original) The method of claim 8, wherein the postforming includes one of pressing at a pressure between 600 MPa and 900 MPa and planar hot-forming.

11. (Original) The method of claim 10, wherein the pressing is performed at a pressure of between 700 MPa and 800 MPa.

12. (Original) The method of claim 1, further comprising:
after annealing the pressed part in a gas mixture of inert gas and oxygen,
mechanically processing at least sections of a surface of the pressed parts.

13. (Original) The method of claim 12, wherein the mechanical processing includes grinding.

14. (Original) A method for manufacturing a pressed part from a soft magnetic composite material, the method comprising:
providing a starting mixture including an iron powder and an auxiliary pressing agent;
pressing the starting mixture to form a pressed part;
annealing the pressed part;
after the annealing, postforming the pressed part; and
after the postforming re-annealing the pressed part.

15. (Original) The method of claim 14, wherein the postforming includes one of pressing at a pressure between 600 MPa and 900 MPa at room temperature and flat hot-forming.

16. (Original) The method of claim 15, wherein the pressing is performed at a pressure between 700 MPa and 800 MPa.

17. (Original) The method of claim 14, wherein the re-annealing is performed at temperatures between 380°C and 450°C over a time period of between 10 and 120 minutes.

18. (Original) The method of claim 17, wherein the re-annealing is performed at a temperature of 425°C over a time period of between 30 min and 60 minutes.

19. (Original) The method of claim 14, wherein the annealing is performed at a temperature of between 150°C to 400°C over a time period of between 10 min and 120 minutes.

20. (Original) The method of claim 19, wherein the annealing is performed at a temperature of between 230°C to 310°C over a time period of between 30 minutes to 60 minutes.

21. (Original) The method of claim 14, wherein the pressing is performed at room temperature at a pressure between 600 MPa and 900 MPa.

22. (Original) The method of claim 21, wherein the pressing is performed at a pressure between 700 MPa to 800 MPa.

23. (Original) The method of claim 14, wherein at least one of the annealing and the re-annealing is performed in one of air, a nitrogen atmosphere, a noble-gas atmosphere, and a mixture of an inert gas and oxygen having an oxygen concentration of between 1% and 10% by volume.

24. (Currently Amended) [[The]] A method of claim 23 for manufacturing a pressed part from a soft magnetic composite material, the method comprising:

providing a starting mixture including an iron powder and an auxiliary pressing agent;

pressing the starting mixture to form a pressed part; annealing the pressed part;

after the annealing, postforming the pressed part; and

after the postforming re-annealing the pressed part, wherein:

at least one of the annealing and the re-annealing is performed in one of air, a nitrogen atmosphere, a noble-gas atmosphere, and a mixture of an inert gas and oxygen having an oxygen concentration of between 1% and 10% by volume; and

the annealing and the re-annealing are performed in the gas mixture of the inert gas and oxygen, the oxygen concentration in the gas mixture being between 1% and 10% by volume.

25. (Original) The method of claim 14, wherein the iron powder in the starting mixture is a phosphatized, pure iron powder and the auxiliary pressing agent is selected from the group including metal stearates, waxes, paraffins, natural or synthetic fat derivatives, and oligoamides, the oligoamides including Kenolube®.

26. (Original) The method of claim 14, further comprising:
after re-annealing, mechanically processing at least sections of a surface of the pressed parts.

27. (Original) The method of claim 26, wherein the mechanical processing includes grinding.

28. (New) The method of claim 14, wherein the starting mixture does not include a thermoplastic material.